

OPTICAL WAVEGUIDE GRATING COUPLER WITH VARYING SCATTER CROSS SECTIONS

Abstract

5 Various configurations of elongate scattering elements in an optical waveguide
grating coupler for coupling light between a planar waveguide and an optical element
such as an optical fiber, where the light may have a Gaussian intensity distribution. The
elongate scattering elements are preferably curved, and in some embodiments, the
scattering elements have elliptically curved shape. One or more of the elongate scattering
10 elements may be segmented into various geometrical shapes, such as rectangular, square,
circular and elliptical. The elongate scattering elements have at least one characteristic
selected from the group consisting of grating width, height, spacing, depth and index of
refraction forming the elongate scattering elements, where the magnitude of the at least
one characteristic varies irregularly with position along the guiding portion of the optical
15 waveguide grating coupler.